

Geometry Chapter 2 Practice Test

Multiple Choice

Identify the choice that best completes the statement or answers the question.

C

1. Petra received the following scores on her spelling quizzes:

6, 9, 10, 10, 9, 10.

What is her mean score?

A 7

B 8

C 9

D 10

5

2. Solve $m^2 = 16$.

F 8

G -8 and 8

H 4

J -4 and 4

$$m = \pm 4$$

D

3. What is the value of $2^3 \cdot 3^3$?

A 18

B 54

C 125

D 216

$$8 \cdot 27$$

H

4. What is the solution to the equation $9(2-x) = 0$?

F -18

G 0

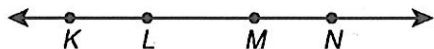
H 2

J 18

$$\begin{aligned} 2 - x &= 0 \\ 2 - 2 &= 0 \end{aligned}$$

D

5. Which is an alternative name for \overleftrightarrow{LN} ?



A \overleftrightarrow{L}

B \overleftrightarrow{LK}

~~C \overleftrightarrow{NL}~~

D \overleftrightarrow{LM}

Matching

Match each vocabulary term with its definition.

- A conjecture
- B inductive reasoning
- C deductive reasoning
- D conclusion
- E biconditional statement
- F hypothesis
- G counterexample
- H conditional statement

G

1. an example that proves that a conjecture or statement is false

A

2. a statement that is believed to be true

D

3. the part of a conditional statement following the word *then*

F

4. the part of a conditional statement following the word *if*

B

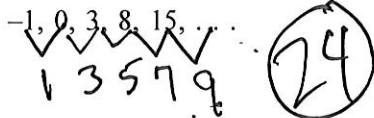
5. the process of reasoning that a rule or statement is true because specific cases are true

H

6. a statement that can be written in the form "if p , then q ," where p is the hypothesis and q is the conclusion

Short Answer

1. Find the next item in the pattern.

-1, 0, 3, 8, 15, ...


2. Show that the conjecture is false by finding a counterexample. $|x| = x$

$$x = -6$$

3. Write "A number divisible by 10 is divisible by 5" as a conditional statement in the form "if p , then q ."

If a # is div. by 10 then it is div by 5.

4. Write True or False. A positive whole number that ends in zero can be written as the product of two numbers that do not end in zero.

$$10 = 5 \cdot 2$$

5. Write the contrapositive of the conditional statement "If two angles are supplements of the same angle, then the angles have the same measure."

If 2 \angle s do not have the same measure then they are not supplements of the same angle.

6. Given: If two angles are complementary, then the angles are acute. $\angle X$ and $\angle Y$ are both acute.
Conjecture: $\angle X$ and $\angle Y$ are complementary. Determine whether the conjecture is valid by the Law of Detachment.

Not Valid.

7. Given: If the area of a circle is numerically equal to the circumference of the circle, then twice the radius is equal to the square of the radius. If twice the radius is equal to the square of the radius, then the diameter is equal to the square of the radius. Draw a conclusion from the given information.

Conclusion

8. Determine whether the biconditional statement is true. If false, give a counterexample. It is Monday if and only if it is not the weekend.

False. Could be Tuesday.

9. Solve the equation. Write a justification for each step.

$$3 = \frac{x}{6} + 1$$

(Given)

$$2 = \frac{x}{6}$$

(- POE)

$$12 = x$$

(* POE)

10. Use the Transitive Property of Congruence to complete the statement "If $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$, then

$$\overline{AB} \cong \overline{EF}$$

11. Write a two-column proof.

Given: $\angle 1$ and $\angle 2$ are supplementary and $\angle 1 \cong \angle 3$.

Prove: $\angle 2$ and $\angle 3$ are supplementary.

Statement	Reason
$\angle 1$ & $\angle 2$ are supplementary	Given
$m\angle 1 + m\angle 2 = 180^\circ$	Def of supp.
$\angle 1 \cong \angle 3$	Given
$m\angle 1 = m\angle 3$	Def of \cong \angle s
$m\angle 3 + m\angle 2 = 180^\circ$	Subst.
$\angle 2$ & $\angle 3$ are supp.	Def. of supp.

12. Write a two-column proof.

Given: $m\angle A = 30^\circ$ and $m\angle B = 2m\angle A$.

Prove: $\angle A$ and $\angle B$ are complementary.

Statement	Reason
$m\angle A = 30^\circ$ $m\angle B = 2(m\angle A)$	Given
$m\angle B = 2(30)$	Substitution
$m\angle B = 60^\circ$	Simplify
$m\angle 1 + m\angle 2 = 30 + 60^\circ$	Substitution
$m\angle 1 + m\angle 2 = 90^\circ$	Simplify
$\angle 1$ & $\angle 2$ are complementary	Def of complementary

13. **Given:** $\angle ABC$ is a right angle, X is in the interior of $\angle ABC$, and $m\angle XBC = 45^\circ$.

Prove: \overrightarrow{BX} bisects $\angle ABC$.

Proof:

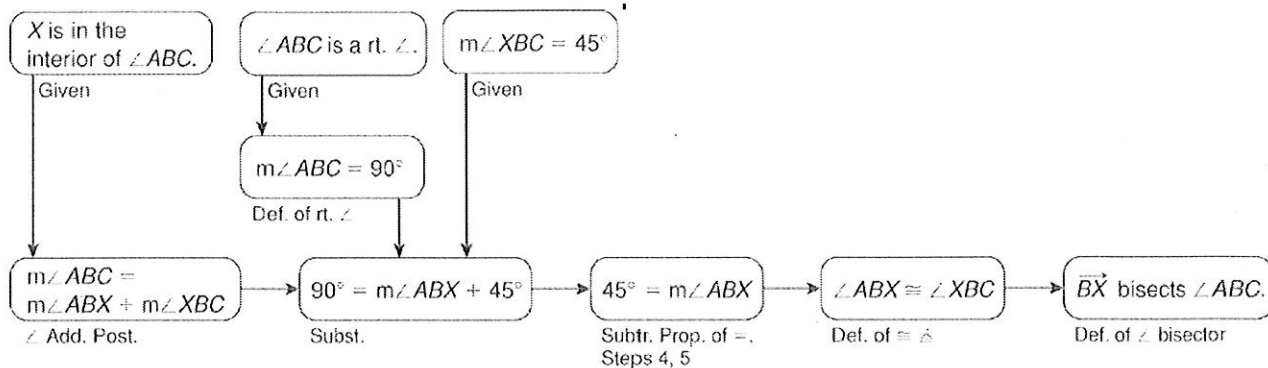
Statements	Reasons
1. X is in the interior of $\angle ABC$.	1. Given
2. $m\angle ABC = m\angle ABX + m\angle XBC$	2. \angle Add. Post.
3. $\angle ABC$ is a right angle.	3. Given
4. $m\angle ABC = 90^\circ$	4. Def. of rt. \angle
5. $m\angle XBC = 45^\circ$	5. Given
6. $90^\circ = m\angle ABX + 45^\circ$	6. Subst., Steps 2, 4, 5
7. $45^\circ = m\angle ABX$	7. Subtr. Prop. of =
8. $\angle ABX \cong \angle XBC$	8. Def. of $\cong \angle$ s
9. \overrightarrow{BX} bisects $\angle ABC$.	9. Def. of \angle bisector

Write a paragraph proof.

We are given that X is in the interior of $\angle ABC$. By the angle addition postulate $m\angle ABC = m\angle ABX + m\angle XBC$. We are also given that $\angle ABC$ is a right angle. Thus $m\angle ABC = 90^\circ$ by the definition of right angle. We are also given that $m\angle XBC = 45^\circ$. It follows that $90^\circ = m\angle ABX + 45^\circ$ by substitution. Next, $45^\circ = m\angle ABX$ by $\ominus =$. By the definition of $\cong \angle$ s $\angle ABX \cong \angle XBC$. Therefore, \overrightarrow{BX} bisects $\angle ABC$ by the definition of \angle Bisector.

14) ANS:

Possible answer:



PTS: 1
MSC: DOK 2

DIF: 2

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